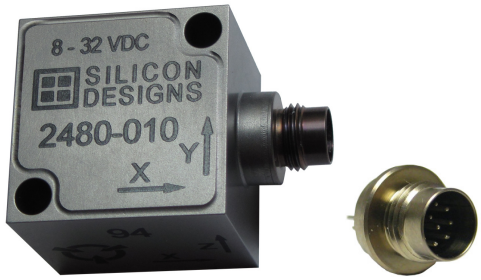
- Hermetically Sealed Titanium Case
- Detachable 8-Wire Cable (sold separately)
- Capacitive Micromachined
- Nitrogen Damped
- ±4V Differential Output or 0.5V to 4.5V Single Ended Output
- Fully Calibrated
- Low Power Consumption
- -55 to +125°C Operation
- +8 to +32V DC Power
- Low Impedance Outputs Will Drive Up To 50 Feet of Cable
- Responds to DC and AC Acceleration
- Non Standard g Ranges Available
- Low Noise
- Serialized for Traceability



Available Cables

Cable Length	Cable Model Number
4 ft	8PIN-CAB-04
10 ft	8PIN-CAB-10
20 ft	8PIN-CAB-20
33 ft	8PIN-CAB-33
50 ft	8PIN-CAB-50

Available G-Ranges

Full Scale Acceleration	Model Number
± 2 g	2480-002
± 5 g	2480-005
± 10 g	2480-010
± 25 g	2480-025
± 50 g	2480-050
±100 g	2480-100
±200 g	2480-200

DESCRIPTION

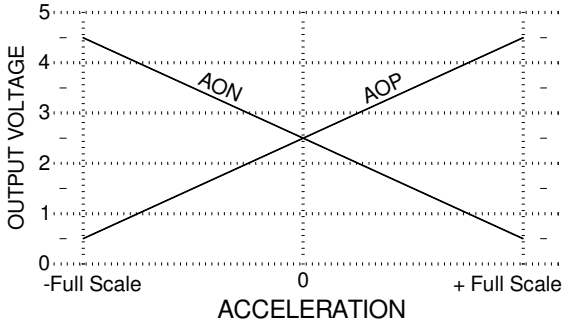
The model 2480 accelerometer is a hermetically sealed version of the model 2470. This rugged module combines three integrated SDI low noise accelerometers with high drive, low impedance buffering for measuring acceleration in commercial/industrial environments. It is tailored for zero to medium frequency instrumentation applications. The titanium case is sealed using a laser welding process and is easily mounted via two #4 (or M3) screws. On-board regulation is provided to minimize the effects of supply voltage variation. It is relatively insensitive to temperature changes and gradients. A model 8PIN-CAB cable, sold separately (see order information above), connects via a miniature 9-pin screw-on connector. NOTE: The connector has 9 pins, but only 8 pins are electrically used for 8 wires. The cable's shield is electrically connected to the titanium case while the ground (GND) wire is isolated from the case. An initial calibration sheet (2480-CAL) is included and periodic calibration checking is available.

OPERATION

The Model 2480 produces three differential analog output voltage pairs (AON & AOP), which vary with acceleration as shown in the figure (at right). The signal outputs are fully differential about a common mode voltage of approximately 2.5 volts. The output scale factor is independent from the supply voltage of +8 to +32 volts. At zero acceleration the output differential voltage is nominally 0 volts DC; at ±full scale acceleration the output is ±4 volts DC respectively. The axis directions are marked on the case with positive acceleration, defined as acceleration in the direction of the axis arrow.

APPLICATIONS

- Vibration Monitoring and Analysis
- Machine Control
- Modal Analysis
- Robotics
- Crash Testing
- Instrumentation
- Rotating Machinery Control



SIGNAL DESCRIPTIONS

VS: (Power) red wire, GND: (Ground) black wire

AOPX: (Output) green wire	X-Axis positive output
AONX: (Output) white wire	X-Axis negative output
AOPY: (Output) brown wire	Y-Axis positive output
AONY: (Output) orange wire	Y-Axis negative output
AOPZ: (Output) blue wire	Z-Axis positive output
AONZ: (Output) yellow wire	Z-Axis negative output

Note: The cable's braided shield is electrically connected to the case. The black ground (GND) wire is isolated from the case. The connector has 9 pins, but only 8 pins are electrically used for 8 wires.

PERFORMANCE

By Model: VS=+8 to +32VDC, TC=25°C.

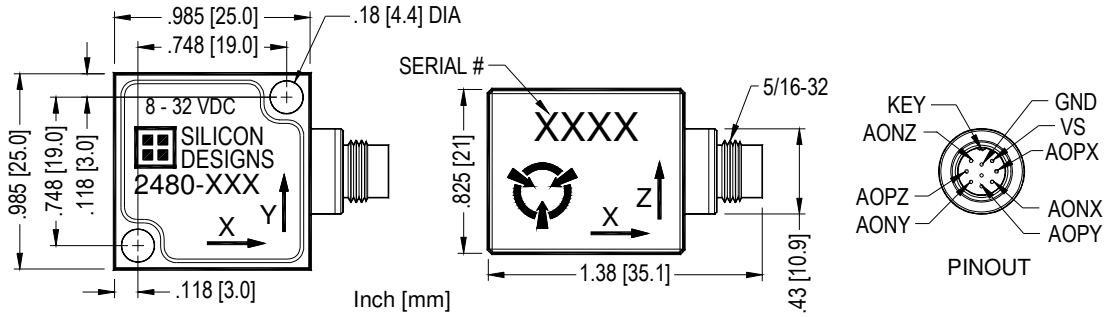
MODEL NUMBER	Input Range	Frequency Response (Nominal, 3 dB) [1]	Sensitivity, Differential [2]	Output Noise, Differential (RMS, typical)	Max. Mechanical Shock (0.1 ms)
	g	Hz	mV/g	µg/(root Hz)	
2480-002	±2	0 - 400	2000	12	2000 g
2480-005	±5	0 - 600	800	14	
2480-010	±10	0 - 1000	400	15	
2480-025	±25	0 - 1500	160	38	
2480-050	±50	0 - 2000	80	75	
2480-100	±100	0 - 2500	40	150	
2480-200	±200	0 - 3000	20	300	

Note 1: 250Hz ±100Hz, -3dB bandwidth, optionally available. Note 2: Single ended sensitivity is half of values shown.

All Models: Unless otherwise specified, Vs=+8 to +32VDC, TC=25°C, Differential Mode.

PARAMETER		MIN	TYP	MAX	UNITS
Cross Axis Sensitivity			2	3	%
Bias Calibration Error	-002			4.0	% of Span
	-005 thru -200			1.5	
Bias Temperature Shift (T_C= -40 to +80°C)	-002		100	200	(ppm of span)/°C
	-005 thru -200		50	100	
Scale Factor Calibration Error[3]			1	2	%
Scale Factor Temperature Shift (TC= -40 to +80°C)	-002 thru -010	-250		+150	ppm/°C
	-025 thru -200	-150			
Non-Linearity (-90 to +90% of Full Scale) [3, 4]	-002 thru -050		0.15	0.5	% of span
	-100		0.25	1.0	
	-200		0.40	1.5	
Power Supply Rejection Ratio		50	>65		dB
Output Impedance			1		Ω
Output Common Mode Voltage			2.5		VDC
Operating Voltage		8		32	VDC
Operating Current (AOP & AON open)			27	30	mA DC
Mass (not including cable)			35		grams
Cable Mass			14		grams/meter

Note 3: 100g versions and above are tested from -65g to +65g. Note 4: Tighter tolerances may be available upon request.



CABLE SPECIFICATIONS & LENGTH CONSIDERATIONS

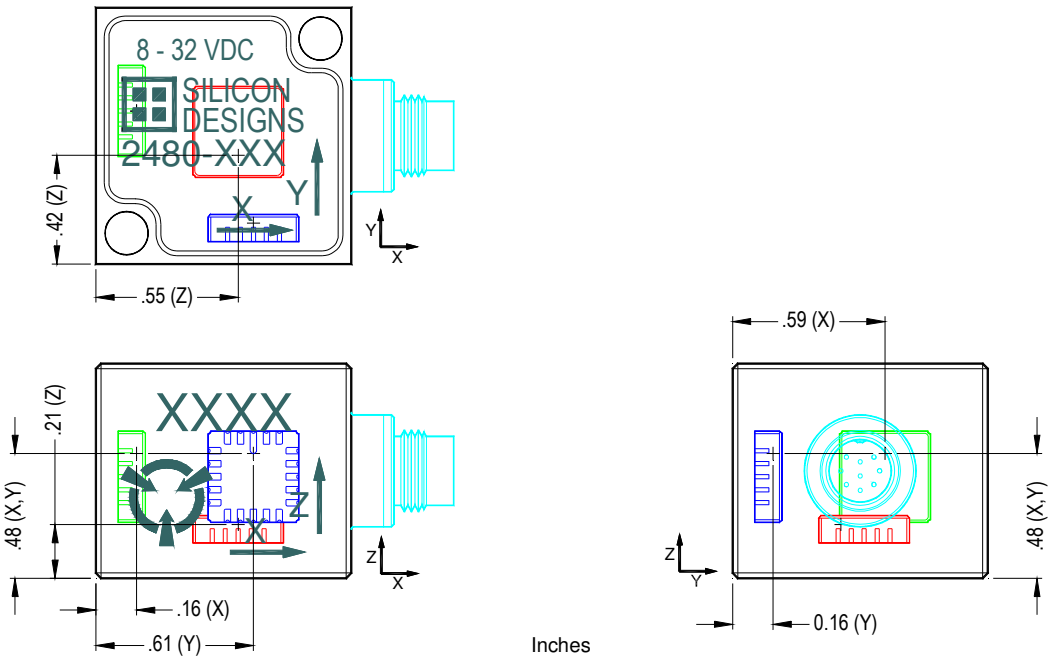
NOTE: The connector has 9 pins, but only 8 pins are electrically used for 8 wires.

The case connector pins and cable connector sockets are gold plated beryllium-copper. The cable connector shells are gold plated brass. The cable consists of four 30 AWG (7x38) silver-plated copper wires with PTFE insulation surrounded by a braided shield. The black FEP shield jacket has a nominal outer diameter of 0.100". Cable lengths of up to 50 feet (15 meters) can be used without the need to test for output instability. For lengths longer than 50 feet, we recommend you check each individual installation for oscillation by tapping the accelerometer and watching the differential output for oscillation in the 20kHz to 50kHz region. If no oscillation is present then the cable length being used is OK. From the standpoint of output current drive and slew rate limitations, the model 2480 is capable of driving over 2000 feet (600 meters) of its cable type but at some length between 50 and 2000 feet, each device will likely begin to exhibit oscillation.

DIFFERENTIAL vs. SINGLE ENDED OPERATION

The model 2480 accelerometer will provide its best performance when you connect it to your instrumentation in a differential configuration using both the **AOP** and **AON** output signals. But a differential connection may not always be possible. In such cases, it is perfectly fine to connect the accelerometer to your instrumentation in single ended mode by connecting **AOP** and **GND** to your instrumentation and leaving **AON** disconnected. Keep in mind however, that for a single-ended connection, the signal to noise ratio is reduced by half, the signal is more susceptible to external noise pickup, and the accelerometer's output will vary directly with any change in the +2.5V reference that you provide.

SENSOR LOCATIONS



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE